MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 3, 2017/2018

BKE2014 – KNOWLEDGE ECONOMY

(All sections / Groups)

5 JUNE 2018
9:00 a.m. – 11:00 a.m.
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of **FOUR (4)** printed pages with **FOUR (4)** structured questions.
2. Marks are shown at the end of each question.
3. Write all your answers in the answer booklet provided.
4. Answer all questions.

QUESTION ONE (25 MARKS)

(a) Distinguish the Information Revolution from the Agricultural and Industrial Revolution.

(8 marks)

(b) Compare between data, information, and knowledge. Use examples of each in your answer.

(9 marks)

(c) Summarise **FOUR (4)** reasons for Malaysia to move from a production-based to a knowledge-based economy, according to the Knowledge-based Economy Master Plan.

(8 marks)

Question Two (25 Marks)

(a) In an organisation functioning in a Knowledge Economy, what are the **THREE (3)** ways that learning can occur? Examine each learning process.

(9 marks)

(b) Analyse the **THREE (3)** sectors in terms of output, found in the knowledge economy.

(9 marks)

(c) Organise the types of research and innovation activities carried out by universities and/ or the private sectors into **THREE (3)** categories based inventors, and explain each of the categories.

(7 marks)

Questions Three (25 marks)

(a) Appraise the following statement:
"The government is an influential user of Information and Communication Technology (ICT)"

(6 marks)

(b) Analyse the **THREE (3)** current trends that are affecting workers involved in the knowledge-based economy.

(9 marks)

(c) Explain the **THREE (3)** stages that make up a social engineering attack.

(10 marks)

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Question Four (25 marks)

Revolution in the Making

The Internet of Things (IoT) has many potential implications for the manufacturing sector. First, it is manufacturers who will install IoT functionality into the products that we buy and use, which will in turn give them the opportunity to change the nature of their relationship with customers and of the value they offer.

Second, and just as significantly, the machinery that manufacturers use to create their products is ripe for the instrumentation, automation and more sophisticated analysis that the IoT allows. Indeed, so great is the expected potential of the IoT in manufacturing that some are predicting a fourth industrial revolution ("Industry 4.0") to spring from its use.

So far, however, manufacturers have made more progress with adding IoT functionality to their products than in their internal operations, according to the IoT Business Index 2016, compiled by The Economist Intelligence Unit and sponsored by ARM and IBM.

When it comes to the use of the IoT for products and services, the manufacturing industry's index score —which represents the average level of IoT achievement across the sector— from 4.23 in 2013 to 4.78 in 2016. This means that the average manufacturing firm has moved from the research phase towards the planning phase.

Of course, many manufacturing companies have already achieved early or extensive implementation of IoT-enabled products, including one-quarter of executives from the manufacturing sector surveyed for the index. For some, this new connectivity provides the opportunity to have a direct channel of communication with customers for the first time. Others are using the data collected from IoT-enabled products to offer new services—and new value—to their customers.

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The manufacturing industry has yet to make as much progress with the application of the IoT to its internal operations. The sector's index score for internal IoT has retreated slightly, from 4.69 in 2013 to 4.48 in 2016. This suggests that the average manufacturing company is still in the research phase of its IoT journey.

This is not to say that manufacturing firms are not making use of networked equipment, argues Tanuja Randery, president, UK and Ireland, at Schneider Electric, a supplier of power systems on which many companies in this industry rely.

"Machines talking to machines is something that's been happening in factories for decades," she says. "But while machines can talk to each other, they're not necessarily talking to IT systems, and that's a bigger problem." It is this failure to bridge the gap between operational technology (plant and equipment) and information technology (computers and digital systems) that most probably explains the sector's relatively slow progress in the IoT Business Index.

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Creating such a bridge requires not only technical integration but also a shift in culture and capabilities, Ms Randery argues. "In many countries, manufacturers are dealing with an ageing workforce. It's a workforce that in many cases is simply not trained in software and analytics. These are not core competencies from a manufacturing point of view, and this, to me, seems a huge hurdle."

Extracted from:
The Economist (2017, February 22). 'Revolution in the making', *The Economist.*

(a) Based on the case study above, analyse **TWO (2)** implications of Internet of Things (IoT) on manufacturers.

(6 marks)

(b) (i) Infer which **ONE (1)** of the two implications discussed in (a) of IoT that the manufacturers are lagging behind.

(6 marks)

(ii) Explain the **TWO (2)** reasons that manufacturers are lagging behind.

(6 marks)

(c) How could manufacturers overcome the reasons discussed in (b) (i) and (ii)? Outline your answers based on the issues faced by the private sectors in the knowledge economy that was discussed in our lecture.

(7 marks)

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